

**Access to Microfinance & Improved Implementation of Policy Reform
(AMIR Program)**

Funded by the U.S. Agency for International Development

IRM: Food Safety Inspection

Import Food Sampling and Re-testing Procedures

Final Report

Deliverable for Policy Component, Task No. 4.6.5
Contract No. 278-C-00-98-00029-00

October, 2000

This report was prepared by John Weatherwax, in collaboration with Chemonics International Inc., prime contractor to the U.S. Agency for International Development for the AMIR Program in Jordan.

Table of Contents

EXECUTIVE SUMMARY	4
INTRODUCTION AND BACKGROUND	5
GENERAL SAMPLING CONSIDERATIONS.....	5
MOH INSTRUCTIONS FOR SAMPLING IMPORTED FOOD.....	7
SAMPLING SCHEDULES	9
TOTAL WEIGHT.....	10
RE-TESTING FOOD IMPORTS.....	10
ANALYTICAL METHODS FOR TESTING FOODS.....	12
CONCLUSIONS AND RECOMMENDATIONS.....	12
ANNEXES:	
ANNEX 1: INTERNATIONAL SOURCES OF SAMPLING INFORMATION.....	15
ANNEX 2: SAMPLING DEVICES REFERRED TO IN THE MOH INSTRUCTIONS FOR SAMPLING.....	16
ANNEX 3: PROPOSED ADDITIONAL SAMPLING DEVICES.....	17
ANNEX 4: SAMPLING SCHEDULES REFERRED TO IN THE MOH INSTRUCTIONS FOR SAMPLING.....	18
ANNEX 5: PROPOSED SAMPLING SCHEDULE FOR MYCOTOXINS IN FOODS.....	20
ANNEX 6: RE-TESTING FOOD IMPORTS- PRESENT MOH INSTRUCTIONS.....	21
ANNEX 7: INSTRUCTIONS FOR IMPORTED FOOD SAMPLING PLANS (REVISED)	22
PROPOSED GUIDELINES AND DOCUMENTATION SYSTEM TO TRACK FOOD INSPECTION AND ANALYSIS RESULTS FOR RISK-BASED PLANNING AND PRIORITY SETTING	41

EXECUTIVE SUMMARY

The Ministry of Health has adopted a procedure for sampling and re-testing import foods that was prepared by a committee consisting of key government ministries and agencies as well as a trade association and the municipality of Amman. This procedure is to become official as of 1 January 2001.

The provisions of the procedure were reviewed in detail and a number of suggested changes were recommended, to improve the procedure and make it more practical and useful. The recommended changes dealt with:

- General sampling considerations such as Health Inspector training; specialized sampling tools; and special techniques such as aseptic sampling for microbiological analysis.
- The current MOH instructions for sampling imported food, including who collects the sample; the problems of container sampling of frozen and refrigerated foods; recommended procedures for special circumstances; and a review of the requirements for sampling under the Jordanian standard for bulk vegetable oils.
- Sampling schedules including recommendations to modify the schedules to reflect total sample weights; to sample by portions to reduce sample size to a manageable level; and to consider a specialized sampling schedule provided for mycotoxins in food
- Re-testing food imports. A completely different procedure was recommended, which provides more objectivity in deciding if a import food which is found to be unfit on original analysis, should be re-tested.
- Analytical methods for testing foods. The only real change recommended here was to ensure that any new analytical methods are validated in the laboratory for both accuracy and usefulness, rather than simply be adopted.

INTRODUCTION AND BACKGROUND

The Ministry of Health (MOH) has adopted a list of instructions for sampling import foods, following approval of the list by the Food Council (an advisory body to the Minister of Health). The instructions are to become official as of 1 January 2001. The instructions were prepared by a committee that included representatives from the MOH, the Ministry of Agriculture (MOA), the Jordan Institute of Standards and Metrology (JISM), the Import Food Trade Association, the Municipality of Amman and the Royal Scientific Society of Jordan.

The instructions are divided into two areas – general sampling instructions and information, and specific sampling schedules. The general instructions also include the provisions for an importer to request a re-test of a given food shipment. The schedules for bulk grains and milled grains and for bulk vegetable oils and liquid animal fats, are both taken directly from International Organization for Standardization (ISO) specifications, namely ISO 6644-1981 and ISO 5555-1991, respectively. For the remaining schedules, the committee, with a few exceptions, used one or more sampling guidelines from the international sources listed in Annex 1 as a starting point for each, with the final schedules decided by the committee after discussions.

The Consultant met twice with Dr. Fathi Saleh, Assistant Director, Food Hygiene Directorate, Dr. Fuad Da'as, Head Officer, Food Safety, and Eng. Ayman Jadid, Head, Food Establishment Section, to discuss the MOH instructions for sampling import foods. The meetings were held in the office of Dr. Ahmad Al-Barmawi, Director, Food Safety Department, MOH.

GENERAL SAMPLING CONSIDERATIONS

The Health Inspectors assigned to do import food sampling are graduates of general secondary (pre-university) schooling, who then are given two years of training in a public health program provided by an institute which is jointly sponsored by the MOH and a university. This program stresses public sanitation and hygiene and apparently contains very little training on food inspection or food sampling procedures.

The Consultant was advised that the Health Inspectors have no specialized tools with which to sample foods. The MOH sampling instructions refer to five sampling devices (pictures attached as Annex 2) – an automatic spout sampler (for bulk grain being off-loaded through pipes); a cylindrical divided bulk probe (for bulk grains stored in bins or on trucks in transport); and bulk liquid or oil sampling devices. None of this equipment is actually available for use. The Consultant provided information on standard food sampling devices that are commercially available from a variety of international sources. Pictures of these are attached as Annex 3. They are:

- A conical trier used for blocks of solid foods, such as cheese or butter. It is used by inserting into the block of food, making a half-turn using the handle and withdrawing the plug so formed.
- A probe trier (also called a “bag thief”) used to sample powdered or granular foods packaged in plastic, paper or burlap bags. The sharp end

provides ease of entry with minimum damage to the bag being sampled. The handle is hollow so that the sampled material may be easily transferred to the sample container.

- A powder trier is a specialized device used for powdered or granulated foods such as dried milk. The International Dairy Federation has established specifications for powder triers used in sampling dried dairy products. It is basically a long, narrow scoop with a sharp, tapered end. It is inserted into the side of the product bag and then emptied into the sample container.
- A piston trier is another specialized device. It is useful to sample boxes, packages or bags containing foods having a paste-like consistency. It consists of a hollow tube with a sharpened end and fitted with an internal plunger or piston. The trier is inserted into the product container and then withdrawn. The piston is then used to empty the filled tube into a sample container.
- A sector trier. This is the same as the cylindrical divided bulk probe referred to above and pictured in Annex 2. The usual sector trier is about 1 m long and is useful for bulk bagged materials as it allows sampling of different areas within the bag. Giant sector triers up to nearly 3 m long are commercially available and are used for sampling trucks and bulk bins of grains. The giant triers have four or more openings.
- A frozen food corer for sampling ice cream or frozen foods. It consists of a hollow metal tube with saw-teeth at one end and an attachment at the other end, that can connect to the chuck of an electric or a hand-operated drill. The MOH has designed a similar coring device and is now having it made for sampling use.
- A dipper sampler used for sampling containers such as barrels holding liquids. It can sample at varying depths, but is not long enough for sampling large tanks of liquids, such as vegetable oil. The liquid sample devices noted in Annex 2 should be used for that purpose.
- A mixing tool used for mixing liquids in barrels or similar containers, to ensure uniformity before sampling.

Note: One commercial source for such sampling tools is International pbi sPa, Via Novara 89, I-20153 Milan, Italy – tel. no. +39-2-404-7941, fax no. +39-2-400-910010.

There are many simple devices that may be used for routine sampling, including spoons, knives, scoops, etc. The fundamental problem is that the Health Inspectors do not appear to use any sampling devices, simple or complex, with the exception of some bulk sampling. Sampling of consumer-sized packages as well as small bulk units weighing up to 20 kg each, essentially consists of taking a specified number of intact units of the food product and having it transported to the laboratory where the actual sampling takes place. This places an undue storage and handling problem on the laboratory especially when large sample sizes are involved. Under the MOH sampling instructions, for example, the laboratory is required to store one-half of the received samples for 4 weeks if the food is determined to be fit for consumption.

Aseptic sampling (sampling for microbiological examination) is also not done. The intact units are sent to the laboratory for them to do the aseptic sampling. This

type of sampling can be done routinely in the field by the Health Inspector. The inspector, however, must be provided with sterile tools and containers. Both are usually provided by the laboratory. For example, a metal sampling tool that can be autoclaved is sterilized by the laboratory and packed in a sterile plastic bag. Autoclavable glass or metal containers are also sterilized and provided. Once used, they are cleaned and re-sterilized for re-use.

MOH INSTRUCTIONS FOR SAMPLING IMPORTED FOOD

Import sample collection is presently done by a Sampling Committee composed of representatives from the MOH, the MOA, JISM, the Customs Department, and any other official participant that is needed. The consignment importer or his representative must also be present during the sampling. The Customs person opens the consignment container(s) and the MOH person does the sampling. If the product is meat, milk or raw fruits or vegetables, the MOA person becomes involved. If the product is labeled, the JISM person reviews the label. All the committee members sign the sample seals and the customs document that becomes the collection report. When sampling is complete, the importer or representative uses their trade seal to close the container(s). This is a cumbersome and less-than-efficient system. The Consultant was informed that after the present draft Food Law is enacted, then the MOH will do all food sampling excepting raw fruits and vegetables for pesticide residues, which will be done by the MOA.

During 1999, 72% of all food imports (excepting fresh fruits and vegetables examined for pesticide residues by the MOA laboratory in Al-Baqa) were examined by the MOH main Food Laboratory in Amman. The remaining 28% were examined by the MOH Food Testing Laboratory in Aqaba. Also during 1999, 86.4% of all domestic or local market samples were examined by the main laboratory in Amman, while 0.6% were examined in Aqaba and the remaining 13% were examined by the MOH laboratory in Irbid, in northern Jordan. The Irbid laboratory examines domestic products only.

Most foods imported into Jordan arrive at the Port of Aqaba (an estimated 80% of total food imports). This means that the majority of foods sampled at Aqaba and in fact the majority of all import foods sampled, are shipped to Amman for analysis. Amman is of course the population center and the destination for much of the imported food. The MOH is considering a proposal to have frozen and refrigerated foods destined for Amman, to be transported there from Aqaba and then sampled on arrival. Most ports have the container unloading area at or very near the port. In Aqaba, the unloading area is about 18 km away, so that sampling is not done during or after the container is unloaded, but at the port itself. To sample a container before unloading means that the sampler has to partially unload the unit just to be able to reach the center and rear parts of the container for a random sample. This is a very difficult process for refrigerated and frozen foods and would tend to thaw the unloaded refrigerated or frozen products in Jordan's hot weather. Therefore, the proposal being considered by the MOH might well be one possible solution to this sampling problem.

The MOH sampling instructions make reference to a sample preparation room at the port of Aqaba that would be used for sampling refrigerated and frozen foods.

This was to be a 240 m² room maintained at 10° C. The room was never constructed and may not be if the proposal referred to above is adopted. Not having such a room available is the primary reason that frozen foods are sent to the laboratory as intact units, at the present time.

The Consultant questioned the practice of making a full sample of each and every code, production date, etc. within one lot of a product, rather than taking one sample covering the codes etc. within the consignment. The Consultant was advised that this was a provision requested by the food importers when the sampling instructions were being prepared. This allows rejection of only part of the consignment (when one code is found unfit) rather than a possible rejection of the whole consignment. (In the experience of the Consultant it would be a rare event to find one code unfit while the others passed and examining every code separately will multiply the laboratory workload).

In the present MOH instructions, if an inspector finds packaged foods to have external physical defects or obvious contamination (e.g. leaking or swollen cans, stained bags, etc.), then the inspector is to collect two samples, one of undamaged product and the other of damaged goods. When sampling a container, the inspector cannot see the extent of the damage or contamination, so sampling at that point would not be worthwhile. However, if the importer unloaded the entire consignment and segregated the sound from the damaged, then the inspector could sample the sound portion for examination. The damaged or contaminated units could then be destroyed.

Bulk grains from trucks or the holds of ships are sampled while the grain is being transported or off-loaded, with the destination of the consignment being a storage area. The MOH instructions require that a sampled consignment must be stored in a manner so that it can be identified later, in the event that the laboratory result finds it unfit. If the laboratory finding is that the product is unfit and it has not been stored properly or has been intermixed with other similar product, then the present instructions simply require a re-sample of the mixed or improperly stored lot. This is not a good practice as it would tend to encourage unscrupulous dealers to blend lots that they suspect may be found unfit, with a larger amount of a good lot, thereby diluting the contamination and producing a combined lot that is found fit on re-sample.

When sampling vegetable oils, the inspector needs to ensure if possible that the oil is consistent and uniform. The instructions for sampling bulk vegetable oils from vertical storage tanks or from tank trucks, require that product consistency be achieved by heating or by mixing by blowing a stream of nitrogen gas through the oil. Neither of these are practical and in fact are most likely impossible with vertical storage tanks or tanks on a truck. The requirement is unfortunately part of the Jordanian standard for vegetable oil.

SAMPLING SCHEDULES

The process of sampling a food product can be ‘objective’ (commonly referred to as “random”, although it never is completely random) or ‘selective’. A selective sample is taken only when there is an obvious defect or contamination of a lot of food, and is quite easy – simply selectively collect some of the damaged portion of the lot to document the problem. Objective samples, on the other hand, are often difficult to collect and represent the vast majority of samples taken for laboratory analysis. All sampling procedures discussed in this report are ‘objective’.

Sample collection can be described as the process of taking portions of a lot, so that the resulting final sample is reasonably representative of the lot. A completely representative sample is only possible with quite small lots. The sample of a large lot and especially a massive bulk lot, can never be completely representative, so that sample size becomes more a matter of practicality. All sampling plans and schedules are based on this fact.

There are two primary considerations, other than lot size, which govern the size of a sample. These are – What is to be tested for and what is its expected distribution through the lot? If, as example, the product is a uniform liquid, then the substance being examined for is likely to be fairly homogeneously distributed, resulting in a smaller required sample size. On the other extreme, a contamination that occurs in small random locations in the lot (such as aflatoxins) would dictate a larger sample.

The sampling schedules included in the MOH instructions for sampling are listed in Annex 4. The number of units to be sampled is generally geared to lot size, and in several schedules that number is impractical if entire units are being collected. For example, Schedule No. 3 covers packages of processed meats and fish, weighing either 1 kg or less, or over 1 kg. For large lots of more than 10,000 packages, the sample size (if intact units are taken) could be 50 kg and up. This is neither practical nor necessary, even if only a portion of each unit is taken. To illustrate the problem – the schedule requires 20 units for a sample of a 1500-unit lot, but only 32 units for a 10,000-unit lot. The additional 12 units are not going to significantly increase or decrease the chances that the lot that is 8500 units larger is found to be fit or unfit.

With some few exceptions, most consumer-sized packaging weighs less than 1 kg each. This includes tins, glass containers, plastic or paper packages and cardboard-type boxes. The exceptions include such items as 5 kg cloth bags of rice or cartons of frozen foods weighing 2-3 kg. Consumer packages of 1 kg or less are usually sampled intact, while portions may be sampled from larger packaging. Bulk packages (e.g. 50 kg burlap bags of grains) are always sampled by taking portions, which are combined to make the overall sample.

Most effective sampling schedules are based on a total sample weight, which would be comprised of individual consumer packages or of portions of larger packaging or of bulk lots. An example is the U.S. Food and Drug Administration (FDA) General Sampling Schedule:

Number of Cartons, Crates, Boxes, Etc.	Total Weight Of Sample (in kg)
12 or less	5
13 to 18	6
19 to 30	7
31 to 56	8
57 to 190	9
Over 190	10

The key point is that for most samples, even of large lots, a maximum sample size of 10 kg is sufficient. The number of smaller individual portions taken from the lot can be increased depending on lot size and to make the sample more representative, but the total sample size would remain the same. To illustrate this, during a review of the MOH Food Testing Laboratory in Aqaba, the Consultant noted a sample that consisted of 16 boxes of bulk cheese, each weighing 20 kg, for a total sample size of 320 kg. Portions of about 100 g each could have been taken from each of these boxes using the conical trier sampling tool in Annex 3, for a total sample size of less than 2 kg. This would have been more than sufficient for the laboratory analyses and would have been representative of the lot.

There are times, however, when much larger sample sizes are needed to ensure that a contaminant, for example, is detected. Aflatoxin is a toxic metabolic product produced by a common mold. Mold growth on a food is never uniform and is dependent on many factors including moisture content, availability of nutrients, etc. Aflatoxin contamination is therefore usually localized in small pockets throughout the food. To ensure that aflatoxin is detected, a large sample is necessary. A sampling schedule for mycotoxins in foods (including aflatoxins) is attached as Annex 5. It was taken from the Food and Agriculture Organization (FAO) Food and Nutrition Paper 14/9, Manuals of Food Quality Control 9. Introduction to Food Sampling.

RE-TESTING FOOD IMPORTS

A procedure for an importer to object to a MOH laboratory test result and request a re-testing, is contained in the MOH instructions for sampling of import foods. An excerpt of the English translation of that procedure is attached as Annex 6. When this was approved by the Food Council, the Council asked the MOH to provide criteria to be used for approval or non-approval of re-testing. Those criteria have not been developed as yet.

Decisions must be objective – they must be based on facts, data or other evidence that can be reviewed and measured against specific criteria. As it is now written, the re-testing procedure does not allow an objective decision and there is no way to prepare criteria because there is nothing for the criteria to be measured against. Under the current MOH procedure there is no basis for requesting a re-test other than the importer's belief that the original laboratory result is not correct and that by itself is not a sufficient reason to authorize a re-test. An unscrupulous importer, for example, would be very willing to pay the 30 JD (\$42) fee for a re-test on the chance that the lot might pass on re-sample and re-testing.

The only valid basis on which to authorize a re-analysis of a sample, is that there is reason to believe that the original analytical result is incorrect. This could be due to a variety of possible problems - an improperly collected sample, use of an incorrect analysis method, faulty instrument calibration, etc. (It is here that a laboratory Analytical Quality Assurance program proves its worth. AQA records and data can answer many such questions and can provide objective evidence that the laboratory work was done correctly). Therefore, before a re-test can be considered there has to be some basis on which to suspect the validity of the original result. The Consultant suggests the following step-wise procedure to initiate and decide on re-testing of import foods:

1. If an importer believes that the test result on his consignment was invalid, he contacts the Food Health Directorate (FHD) and requests a portion of the unanalyzed sample reserve maintained by the laboratory.
2. The importer has an examination made of the provided sample, by a qualified laboratory using an approved analysis method.
3. If the result of this examination is significantly different from the original result and shows that the food meets Jordanian standards, then the importer may formally and in writing, make an application to the FHD to re-test the consignment in question. The application must include a copy of the records of the second laboratory test, with all raw analytical data and any chart recordings.
4. The FHD reviews the application and both sets of laboratory records and data. If the reviewer finds the original analysis to be valid and the second analysis to be faulty, the application is denied and the importer so notified. If, however, the reviewer finds the original analysis to be suspect, or if he finds that both of the analyses appear to be valid, then the application is approved and a re-test is authorized. In certain rare instances where an immediate decisions cannot be made because special analytical issues need to be considered, then the application and laboratory records would be referred to a competent technical committee for their consideration and decision. (This committee would be formed as described in Annex 6).
5. An authorized re-test (whether by the FHD or by the competent technical committee) would include a re-sample of the consignment. An alternate MOH Food Laboratory would conduct the re-test. For example, if the Aqaba laboratory made the original test, then the re-test would be done by the Amman laboratory, and vice versa.
6. The importer would be charged the required fees for the authorized re-test.

Some of the terms used in the procedure suggested above, need definition or clarification. A “qualified laboratory” would be one acceptable to the MOH. Some possibilities would include the Royal Scientific Society of Jordan in Amman, the University of Jordan Agriculture Department in Amman, and the University of Science and Technology in Irbid (about 70 km north of Amman). There are no “certified” laboratories in Jordan either private or government, and any such

certification (using ISO specifications, for example) would probably be done by JISM. An “approved analytical method” would be one acceptable to the MOH and should be an internationally recognized procedure. The term “significantly different” means that the result from the second laboratory is clearly outside of normal analytical variation for the testing method used. In practice, any application for re-testing would have a second test result that would always be “significantly different” from the original result, in that the original would show the food to be unfit, whereas the second analysis would show the food to be fit. In those cases where there is a large difference between the two analyses and a review of the records shows that neither analysis is flawed, then a re-test should automatically be granted to resolve the issue.

ANALYTICAL METHODS FOR TESTING FOODS

During earlier reviews, visits and discussions concerning MOH laboratories, the Consultant found that the analytical methods used were typically AOAC International, Codex, and selected references from European, North American and Australian government agencies. This was also true of the MOA pesticide residue laboratory. Laboratories involved in import food testing must use internationally recognized analysis methods and as far as the Consultant could determine, the MOH and MOA laboratories were doing just that. Methods published by organizations such as AOAC International undergo extensive collaborative testing in multiple laboratories. This testing is designed to find flaws in the method and to determine if the procedure is sufficiently rugged to give good results in the hands of different analysts, using a variety of instruments under differing conditions. Many countries accept such methods as “official” for purposes of enforcing their food laws.

Selection of the proper method is only the first step, however, as the analysts using the method must be able to demonstrate that they are capable of obtaining acceptable results. This is called Methods Validation, but for established methods it is more a validation of the analyst and the laboratory. This is yet another argument for initiating Analytical Quality Assurance in a laboratory. A QA program includes validation of any new methods placed into use as well as performance testing to ensure that the analytical staff can effectively use those methods.

CONCLUSIONS AND RECOMMENDATIONS

Note: The conclusions and recommendations of this report will be grouped using the same headings as were used in the body of the report

General Sampling Considerations

1. MOH Health Inspectors now receive food inspection and sampling training primarily while working. Very little formal instruction or training in this area is provided during their two-year studies at the public health training institute. The MOH is a joint sponsor of that institute and should therefore have some control over the training curricula. It is therefore **recommended** that the curricula for the public health training program be modified to include formal courses on food inspection techniques and food sampling procedures.

2. Efficient and effective food sampling requires the use of appropriate tools, from the simple to the specialized. Annex 3 describes many of the more specialized sampling devices. It is **recommended** that the MOH consider the purchase of such tools as well as providing a sampling kit for each Health Inspector to include such routine items as spoons, scissors, a knife, tongs, plastic gloves, etc.
3. Regarding the sampling process itself, it is strongly **recommended** that Health Inspectors be instructed to sample portions of product packages rather than intact units (especially large units) whenever possible.
4. It is further **recommended** that the MOH purchase equipment and train Inspectors in aseptic techniques for sampling food to be examined for microbiological contamination

MOH Instructions for Sampling Imported Food

5. As noted previously in this report, the use of a Sampling Committee is not efficient. The Committee is apparently an outgrowth of agreements among the ministries and as such must be used at present. However, if it becomes possible after enactment of the present draft food law, or through new inter-ministerial agreements, it is **recommended** that the present Sampling Committee arrangement be discontinued and that food sampling be done by Health Inspectors only. Other ministries, such as the MOA, involved in food sampling would separately do their own sampling.
6. Sampling of frozen and refrigerated foods from containers is a major problem at the Port of Aqaba, especially during the hot summer months. Most of such shipments are apparently destined for Amman. It is therefore **recommended** that the MOH favorably consider the proposal to transport frozen and refrigerated foods to Amman while in their container, where they would be unloaded and sampled at the importer's storage area.
7. Partially damaged or contaminated lots are always a problem at a port. The damage can occur prior to shipment or while in transit. When such a lot is found, it is **recommended** that the importer be required to unload and segregate the lot into undamaged units and those that are damaged or contaminated. The inspector would then sample the sound portion for laboratory testing and the importer instructed to destroy the damaged portion.
8. The process of intermixing a smaller lot of a contaminated food with a larger lot of uncontaminated food, is called "blending" and can be used by unscrupulous importers to mask contamination. This is easily done with bulk grain shipments. The present MOH instructions are to simply re-sample if an unfit lot of bulk grain is found to have been improperly stored or mixed with another lot while the analysis was being made. It is **recommended** that in such cases, no re-sample be made and that the entire mixed lot be considered to be unfit. This will ensure that the importers will take care to store a sampled lot properly pending laboratory analysis.

9. For sampling bulk tanks of vegetable oils, the MOH instructions apparently reflect the Jordanian standards requirement that the bulk oil be made uniform and consistent before sampling, by heating or by passing nitrogen gas through the oil while in the tank. For tank trucks and large vertical storage tanks this is not just impractical, it is probably impossible. It is **recommended** that the Jordanian standard for bulk vegetable oils be reviewed and be modified to provide practical procedures for bulk oil sampling.

Sampling Schedules

10. All of the sampling schedules contained in the MOH instructions for sampling of import foods refer to sampling units of product without referring to a total weight for the sample. The total number of units that are required to be sampled by several schedules is also impractical. It is therefore **recommended** that the schedules indicate that, where possible, a portion of each unit is to be taken rather than an intact unit, and that a maximum total sample size be indicated when such portions are taken.
11. Mycotoxin contamination of a food (such as Aflatoxins) is an example where large sample sizes become a necessity in order to detect the contamination. The present sampling schedules do not recognize this particular problem. It is therefore **recommended** that the MOH consider the mycotoxin sampling schedule provided in Annex 5 for those foods susceptible to such contamination.

Re-testing Food Imports

12. In the body of the report (page 8) the Consultant suggests an objective procedure for an importer to request and possibly receive a re-test of a given consignment. The procedure is based on comparison and review of analytical data. This suggested procedure differs significantly from the present MOH instructions regarding the re-test of food imports. It does, however, make the re-testing procedure more objective and less dependent on subjective evaluations. It is therefore **recommended** that the MOH consider the re-testing procedure suggested on page 8 for adoption.
13. A key issue in any re-testing procedure is the identification of qualified laboratories to do testing for the importers. This could be done by some agency (probably JISM) evaluating and certifying laboratories in accordance with ISO or other specifications. A few laboratories are presently considered to be qualified, but no laboratory has actually been certified. It is therefore **recommended** that the MOH discuss with JISM the possibility of certifying select laboratories for use in this program.

Analytical Methods for Testing Foods

14. No problems were found with the analytical methods used by MOH laboratories and it is **recommended** that the MOH continue to use internationally accepted methods in its import food analysis. It is further **recommended** that programs be instituted in the MOH laboratories to validate all new methods placed in use and to ensure that staff is trained in the use of those methods.

Annex 1: International Sources of Sampling Information

Attached

Annex 2: Sampling Devices Referred to in the MOH Instructions for Sampling

Attached

Annex 3: Proposed Additional Sampling Devices

Attached

Annex 4: Sampling Schedules Referred to in the MOH Instructions for Sampling

SAMPLING SCHEDULES

The Ministry of Health Instructions for Imported Food Sampling Plans provides a number of sampling schedules for food products. These are:

- Grains and milled grains (in bulk) (refers to ISO standard 6644-1981 “Cereal and milled cereal products – automatic sampling by mechanical means”)
- Oils and fats (liquid form in bulk) (refers to ISO standard 5555-1991 “Animal and vegetable fats and oils sampling”) (has been incorporated into Jordan Standard Specification No. 5/1998)

The following are taken from Annex C to the above document. The schedule numbers are as listed. These were prepared by a committee which generally used various international sampling procedures as a starting point and after discussion, decided on the final schedule. Where given, the reference numbers in parentheses refer to the starting point procedures listed in Annex 1 to this report.

1. Tinned, packaged and packed foods that are not affected by storage (shelf-stable).
2. Frozen red and white meats and fish – aimed for direct sale to the consumer (13).
- 2A. Frozen red and white meats and fish – imported for manufacturing purposes.
3. Processed products of red and white meats and fish (excluding well-sealed tins) (2).
4. Dried milk (3).
5. Cheese (Jordanian Standard).
6. Grains, herbaceous and dates packed in large bags, containers or cartons (4,7).
7. Spices, condiments and gums packed in large bags, containers or cartons (6,7).
8. Dried yogurt (Jordanian Standard).
9. Essences of soda drinks, fruit juice and beverages as well as essences of rose water, orange-flower water, food additives and similar substances for manufacturing purposes only.
10. Vegetable oils or animal ghee packed in containers or plastic packages.
11. Liquid, frozen, dried and pasteurized products of eggs (5,6,7).
12. Wheat flour, macaroni, spaghetti, malt and the derivatives of wheat flour, filled or packed, that are consumed after being cooked (7).
13. Tea in packages that contain more than 20 kg (ISO 1839 – 1980).
- 13A. Tea in packages that contain 20 kg or less (ISO 1839 – 1980).
14. Sucrose and liquid glucose in large parcels (bags, barrels, etc.) (7).
15. Cocoa powder, chocolate, candies, halvah and biscuits of whatever type (5,6,7).

16. Tahina, mayonnaise, butter and peanut butter (Jordanian Standard for Tahina; 5,7 for others).
17. Ice cream (6).
18. Frozen or dried fruit and vegetables in addition to Qamar Al-Ddin “Apricot Extract” (5,7).
19. Special dietary foods and food supplements.
20. Baby and infant foods including baby milk (5,6,7).
21. Bottled water (6).

Annex 5: Proposed Sampling Schedule for Mycotoxins in Foods

SAMPLING SCHEDULE FOR MYCOTOXIN ANALYSIS*

Food Product	Packaging	No. of Sample Portions (1)	Portion Size (1)	Total Sample Size (1)
Peanut butter - smooth	Consumer	24	0.25 kg	6 kg
	Bulk	12	0.5 kg	6 kg
Peanut butter – chunk style; peanuts shelled, roasted or unroasted; peanuts ground for topping	All	48	0.5 kg	24 kg
Tree nuts general, shelled, in-shell, slices, pieces or flour	All	10	0.5 kg	5 kg
Tree nuts paste	All	12	0.5 kg	6 kg
Corn – shelled, meal or flour	All	10	0.5 kg	5 kg
Oil seed meal; peanut meal	Bulk	20	0.5 kg	10 kg
Edible seeds – melon, pumpkin, sesame	Bulk	50	0.5 kg	25 kg
Ginger root – ground (in small contain.)	Consumer	-	-	5 kg
Milk – whole, skim, low-fat	All	10	0.5 kg	5 kg
Small grains – wheat, barley etc.	Bulk	10	0.5 kg	5 kg
Dried fruit – figs etc	All	50	0.5 kg	25 kg
Foods susceptible to mycotoxin Contamination – large product size	Consumer	50	0.5 kg	25 kg
Foods susceptible to mycotoxin Contamination – small product size	Consumer	10	0.5	5 kg

(1) - These are minimums only. Larger numbers of portions or of sample sizes may be collected.

* - Information in the schedule is taken from Annex D to FAO Food and Nutrition Paper 14/9, “Introduction to Food Sampling”.

Annex 6: Re-testing Food Imports- Present MOH Instructions

Re-testing Food Imports (Present MOH instructions)

If an importer objects to the analysis result by the MOH Food Testing Laboratory, then the possibility to repeat the test shall be considered within the following framework:

1. The objector to the result of the of the laboratory test shall submit an application in writing to the Food Health Directorate to request a repeat of the test, stating the reasons for the objection.
2. The Food Health Directorate shall review the request and shall either approve a repeat of the analysis or will refer the matter to a technical committee that is competent to consider applications for repeat testing.
3. The technical committee shall be constituted of experts that shall be reformed each year to consider applications for repeat testing. The committee shall be comprised of competent technicians representing the following parties:
 - The Ministry of Health/Food Health Directorate
 - The Ministry of Health/Food Laboratories, Amman
 - The Ministry of Agriculture
 - Specifications & Standards Institute
 - Foodstuff Merchants Association
 - Any other related party in case the matter shall require the same.
4. The competent technical committee shall give the priority to the approval of the test's repetition. However, in case of non-approval, then the committee shall submit a report in which it shall state at the reasons for the non-approval.
5. After the committee studies the full details related to the consignment as well as the result of the laboratory tests and if it approves the repetition of the test, then the committee shall specify a plan for obtaining the samples on a proper scientific basis which defines the method of collection of the samples, the amount of the sample, the nature of the surface test and the laboratory tests to be performed. In addition, the committee will nominate the testing laboratory.
6. Fees shall be collected from the importer for the repeat of the test, that shall include the costs of the laboratory tests.

ANNEX 7
Instructions for Imported Food Sampling Plans (Revised)

Ministry of Health & Health Care
Primary Health Care General Directorate
Foodstuff Health Directorate

Instructions for Imported Food Sampling Plans

These instructions are dedicated for determining the amount of the samples and the methods for obtaining the same from imported food consignments that are subject to laboratory tests to determine if they are fit for human consumption.

[Note: In this revision, strikethroughs represent proposed deletions, underlined text indicates proposed additions, and brackets [] enclose notes or comments. The recommendation numbers refer to the report on Import Food Sampling and Re-testing Procedures.]

A. The definition of the terms used in these instructions:

1. The ~~Sampling Committee~~: Sample Collector

~~The Technical Committee instituted~~ Sample collection of import foods at the customs centers ~~consisting of~~ will be conducted by representatives of the Ministry of Health; When necessary for their own purposes, representatives of the Ministry of Agriculture, the Specifications & Standards Institute and the Customs Department, in addition to any other related official party ~~when needed~~ shall be present during sample collection. [See recommendation 5]

2. The Working Mechanism of the Sampling Committee:

- The samples shall be taken at the customs center by ~~the Sampling Committee having the majority of the members present including~~ the representative of the Ministry of Health. The owner or his representative shall attend.

- The owner of the consignment or his representative shall be in attendance when the sample is collected. His signature shall be taken together with the signature of the ~~Sampling Committee's members~~ sample collector for the sample collection report.

- The ~~Sampling Committee~~ sample collector shall enter on the collection report all appropriate notes regarding the consignment, the method of collection of the samples and the amount of the same.

- The sample collection and transport to the laboratory shall be done in a way that shall assure maintaining the sample in the same conditions under which it was sampled, so that the collection and transport will have no effect on the approval or rejection of the consignment from which the sample was taken.

3. Representative Sample:

The sample obtained from the consignment through the methods appointed herein shall represent the quality and the specifications of the food for which the decision shall be made.

4. The Consignment:

The quantity of the foods that shall arrive at the customs center which involves one customs transaction, delivery order or bill.

5. The Lot or Batch:

A specific quantity of food within a consignment of the same type and trade mark that holds a same lot number and/or production date in addition to being manufactured under similar conditions.

6. Parcels:

The cases, cartons, bags, containers or barrels of the consignment of the same brand.

7. The Unit or Package:

The smallest piece inside the parcel that bears a manifest card pursuant to the instructions of the Jordanian Standard Specification stating at all the necessary information for the brand (such as the package, can, glass container .. etc.).

B. Notes Related to Sampling

1. The Committee shall obtain the samples of foods that do not need special conditions under which they shall be taken, at the location of the consignment in the customs center.
2. Samples that need special conditions under which they shall be taken, shall be obtained in a room dedicated to that effect at the customs center, using proper sampling tools. [There is no such room at present at the Port of Aqaba and Health Inspectors at present have no sampling tools. See recommendation 2]

If the place and necessary tools are not available, then intact sample units shall be sent to the laboratories of the Ministry of Health to do the necessary sampling and for return of the sample to their owner still valid for marketing in the event they are found fit for human consumption.

3. For sterilized food parcels “such as the barrels of juice essences, sterilized soda beverages, nutritive additions essences and others”, the Sampling Committee shall have the parcels marked together with the seal of the Committee’s members. The parcels shall be delivered to the owner and a letter shall be addressed by the head of the customs center to the Director of the Health Department stating in which area the factory is located. The samples shall be obtained from the parcels selected by the Sampling Committee at the customs center directly before manufacturing, but will allow the manufacturing establishment to use the parcels from which the samples have been taken, in food manufacturing while laboratory testing is being done.

4. During collection of the samples, the number of the lot and the date of production or harvesting shall be considered and samples shall be obtained from each lot and date of production or harvesting separately.
5. If all the parcels or packages of the consignment are apparently consistent and free from any visible defects, then the samples shall be obtained pursuant to the instructions and schedules enclosed herewith.

However, if there are apparent differences on the outside of the parcels or packages of the consignment (such as wetness, rust, swelling, dents, leakage, impurity or the removal of the label ... etc.), then the units of the consignment shall be sorted into ~~apparently consistent groups and separate samples shall be obtained from each group.~~ damaged and undamaged portions by the importer. A sample will be taken of the undamaged goods for laboratory testing. The damaged units will be destroyed. The sample collection form sent to the laboratory shall have the notes of the ~~Sampling Committee sample collector~~ regarding the apparent physical defects found in the damaged portion. [See recommendation 7]

6. If samples are taken from bulk foods (such as grains, herbaceous plants, dehydrated herbs, dates etc.), then the weight of each sample unit related to each sampling location shall not be less than 200 g except for dried dairy products for which the schedule related to the same shall be applied.
7. Regarding refrigerated or frozen food consignments, the Sampling Committee shall assure that the temperature under which the refrigerated and frozen foods have been maintained while being shipped has been consistent with the instructions of the Ministry of Health. Upon sending the samples for laboratory testing, the observations of the consignment shall be shown (such as noting a bad smell inside the means of transport, observing a separate bloody liquid inside the parcels, or observing that the cartons are damaged etc.) on the sample collection report form.

Refrigerated food samples shall be taken and placed directly in a Isolation Ice Box [not available at the Port of Aqaba] after which it shall be sent to the laboratories as soon as possible.

If it is not possible to take parts of the units of a frozen foods consignment at the customs center as samples for the laboratory test, then complete units of such foods shall be sent to the laboratories to be tested. [Portions of each unit should always be taken whenever possible. See recommendations 2, 3, and 4]

If it is possible to obtain parts of the units of the frozen foodstuff consignment, then the following steps shall be applied:

- The units of the sample shall be sent to the samples preparation room located at the customs center for sampling provided that the room's temperature shall not exceed 10 degrees centigrade. [There is no such room in Aqaba]

- A piece of each unit amounted to 20 cm. length, 20 cm. width and the height of the unit shall be obtained by sterilized tools and placed in a sterilized package to be sealed and kept at the "Ice Box" [not available in Aqaba] after which it shall be sent to the laboratory promptly.

~~8. The samples obtained at the customs center shall be taken at twice the amount stated in the schedule instructions. The Sampling Committee shall divide the sample into two equal parts which shall be placed in parcels that shall bear the consignment information, be signed by the Sampling Committee and be sealed by an official seal. [MOH indicated that this and the succeeding four paragraphs are not done. The actual final instructions are for the laboratory to divide the received sample into two portions; to examine one portion and if that examination indicates that the food is fit for consumption, to retain the second portion for four weeks]~~

~~9. The first part of the sample shall be sent with an official letter to the laboratories of the Ministry of Health to be tested for its fitness for the human consumption.~~

~~10. The second part of the sample shall be delivered to the consignment owner to be kept in a proper manner. It may not be disposed of until the laboratory results of the first part are completed.~~

~~11. In the event that the first part shall prove to be fit for human consumption and the consignment shall be cleared, then the consignment owner may dispose of the second part delivered to him.~~

~~12. In the event that the first part of the sample is found unfit and that the owner shall object to the laboratory result, then a technical committee shall be instituted to repeat the laboratory test using the second part delivered to the owner, in addition to any other expanded samples that shall be deemed by the technical committee to be required for testing to settle the dispute.~~

C. Sample Preparation, Sending and Receipt

1. The samples shall be enclosed with a letter giving all of the data related to the sample, including the date of production and expiry in addition to the names and signatures of the ~~committee that obtained the sample~~ sample collector.
2. The samples shall be placed in containers, envelopes or bags that shall be well closed and officially sealed with the signatures of the ~~Sampling Committee~~ sample collector placed in such a manner that will prevent manipulation of the sample.
3. The samples of refrigerated and frozen foods shall be placed in special containers that shall maintain the required temperature for that food and shall be delivered to the laboratory on the same day the sample was collected, or soon as possible.

4. The laboratory shall receive the samples during working hours - 8:00 a.m. until 1:00 p.m.
5. The laboratory shall issue the carrier of the sample a receipt for the sample stating the date and time of the receipt and the name and signature of the recipient.

D. Repeating the Test

If the importer has objection to the findings of the laboratory test on the sample, then a possible repeat the test shall be considered within the following framework: [\[See recommendations 12 and 13, and page 8 of the report for a proposed procedure\]](#)

- ~~1. The objector shall submit an application in writing to the Food Health Directorate requesting a repeat of the test and stating at the reasons for the objection.~~
- ~~2. The Food Health Directorate shall review the application to retest and will either approve a repeat of the test or will refer the application to a technical committee that is competent to consider if the test should be repeated.~~
- ~~3. The technical committee shall consist of experts that shall be reformed each year to consider applications for retesting. The committee shall be comprised of competent technicians representing the following parties:

? The Ministry of Health/Food Health Directorate
? The Ministry of Health/Foodstuff Laboratories, Amman
? The Ministry of Agriculture
? Specifications and Standards Corporation
? Foodstuff Merchants Association
? Any other related party in case the matter shall require the same.~~
- ~~4. The competent technical committee shall give priority to the approval of the test's repetition. In the event of non approval, then the committee shall submit a report which states the reasons for the non approval.~~
- ~~5. The committee shall study all of the details related to the consignment as well as the result of the laboratory tests and if a repeat of the test is approved, then the committee shall specify a special plan for collection of a resample on a proper scientific basis including how the resample is to be collected, the amount of the resample, the nature of any physical examination and what laboratory tests shall be required. In addition, the committee will nominate the laboratory to perform the retest.~~
- ~~6. Fees shall be collected from the consignment owner, that shall include the costs of the laboratory tests and the expenses of transport and accommodation of the committee's members pursuant to the applicable Transport & Travel Ordinance.~~

The Amount of Sample and the Methods for Collection for Grains and Milled Grains Available in the Holds of Vessels, Trucks or Storage Warehouses and Magazines in Bulk

A. Collecting the Samples from the Holds of the Vessels and Magazines

1. The samples shall be obtained at separate periods of time while the product is being discharged from the magazines or trucks, with the number of the samples determined by the velocity of the product flow, as noted below. It shall be preferred to use the Spout Sampler that shall be applied through which the flowing curve with an angle at 35 degrees or more so that the grains of wheat or other grains shall not be crushed and ensuring that the samples are obtained from the cross section of the flowing product.
2. Separate samples shall be obtained from each hold of the vessel or storage magazine.
3. One sample shall be obtained for each 5000 kg of product and the weight of that sample shall not be less than 400 gm. [\[See recommendation 11 and Annex 5 to the report, for mycotoxins sampling of grains\]](#)
4. The samples are to be well mixed as a bulk sample so that it represents the quantity of the grains in the same hold, and the sample shall total not less than 5 kg not more than 10 kg depending on the amount of the consignment being sampled. [\[See recommendation 11 and Annex 5 to the report\]](#)

B. Collecting the Samples from the Storage Warehouses

- The samples shall be obtained by the Cylindrical Sampler from the full depth of the grains layer if such an instrument is available.
- If the Cylindrical Sampler is not available, then the method for collecting the sample shall depend upon the conditions and details of the storage, with the samples to be obtained from the surface, middle and deep layers. [\[This may be impossible without the proper sampling tools. See recommendation 2 and Annex 3 to the report\]](#)
- One sample shall be obtained for each 5000 kg and the weight of the sample shall not be less than 400 gm. [\[For mycotoxins, see Annex 5 to the report\]](#)
- The sample is to be well mixed as a bulk sample so that it represents the grains in the same hold, and the sample shall total not less than 5 kg not more than 10 kg. [\[See Annex 5 to the report\]](#)

C. Collecting Samples from Trucks

1. A total of 8 samples weighing 400 gm each shall be obtained from 8 locations both in the middle and from locations at a distance of 50 cm from the sides, as noted in the following figure:

*		*		*
	*		*	
*		*		*

2. The samples shall be merged and well mixed as a bulk sample so that it represents the grains in the ~~truck same hold~~, and if two or more trucks representing the consignment are sampled the total sample for the consignment will be ~~shall total~~ not less than 5 kg not more than 10 kg depending on the amount of the consignment..
3. The consignment owner shall store the quantities of the grains represented by each consignment separately in such a way that it may be identified later if necessary.

D. If the result of the laboratory test of the samples obtained from the trucks or the holds of vessels shall determine the products to be unfit for the human consumption, and if the identification of the consignment sampled is not possible because it has been intermixed or stored in a manner that precludes identification, then the entire improper lot will be considered to be unfit. ~~additional samples shall be obtained from the lot in accordance with the provisions listed under paragraph D above. The result of the retesting shall be used as the basis for clearance or non clearance of the product. [See recommendation 8]~~

E. Directive Notes Related to the Surface Test for the Samples of the Grains and Milled Grains for Investigating Hidden Insects

- Large insects such as cockroaches are usually found ~~available~~ at places close to the surface near the points exposed for ventilation.
- For investigating grain storage ~~minor~~ insects such as ~~Tribolium spp~~ genus Sitophilus, samples shall be obtained from depths at a distance of 2-3 meters from the lower bottom.
- If the air temperature over the grains is higher than 15 degrees centigrade, then the sample shall be obtained at a depth of 10 cm from the surface.
- If the air temperature over the grains is 15 degrees centigrade or less, then the sample shall be obtained at a depth of 25 cm.
- The amount of the sample shall not be less than 1 kg.

The Amount of the Sample and the Methods for Collection of Vegetable and Animal Oils Available in Tanks, Trucks or Through Pipes in Bulk

The most suitable substance to be used for the collection of samples of oils and fats, is stainless steel. Aluminum may be used only for oil with a low degree of acidity but it may not be used for storage. Copper or plastic containers shall not be used. If heating is required for facilitating sample collection, then it is essential that the temperature of the oil shall not exceed the limits listed in Annex A.

Obtaining samples from tanks which are vertical cylinders

- Before starting the sample collection, it is important that the product is consistent in a liquid form. Samples shall be taken to assure that the oil is consistent and if heating may not be used to improve the consistency for any reason whatever, then the nitrogen gas may be applied “through blowing”. [This may not be possible. See recommendation 9]
- Samples shall be obtained separately from each tank and the volume of each sample shall not be less than one liter.

~~2-If the oil is not consistent and there are two distinct layers, then attempt to obtain a 1 liter sample from each layer. If it is not possible to obtain a consistent product inside the tank, then samples shall be obtained from various depths starting at 30 cm from the top surface (i.e. at the depth of 30 cm., 60 cm., 90 cm., etc.) until the bottom is reached. Afterwards, the samples shall be mixed to give two samples one of which shall be of clear oil while the other shall be of the insulator layer. [Detailed depth instructions to the sampler are not necessary]~~

- If the oil is consistent, then the samples shall be obtained from the top, the middle and the bottom at the following depths:-
 - The sample from the top shall be obtained at the level of 1/10 of the total depth from the surface.
 - The sample from the middle shall be obtained at the level of 1/2 of the total depth from the surface. [Should describe the sampling device used or refer to devices in Annex B, as done below for trucks]
 - The sample from the bottom shall be obtained at the level of 9/10 of the total depth from the surface. [Should describe the sampling device used or refer to devices in Annex B, as done below for trucks]

Obtaining samples from the tanks of the trucks, vehicles and tanks in the form of horizontal cylinders.

- Samples shall be obtained as soon as possible after filling the tanks and before the occurrence of any precipitation or formation of any layer.
- If it is not possible to obtain the sample promptly after filling, then the contents of the tank shall be made consistent by blowing nitrogen gas or through heating. [See recommendation 9]

- The number of the samples, the levels at which they are collected and the volume of each, shall be as given above when sampling from tanks which are in the form of vertical cylinders.
- For collection of the samples, instruments illustrated in Annex B, figures B1, B2, B3 shall be applied.

Obtaining Samples from Pipes Through the Movement of the Oil

This method shall be applied only in the event that the fat or oil is in a liquid form in which case samples shall be obtained from the flowing stream of the oil on regular intervals during the discharge process. The sample size should be at least 1 liter.

Obtaining Samples from the Tanks of the Vessels

Collect the samples during the discharge process of the oil in accordance with the above provision for sampling from pipes.

N.B. The Jordanian Standard Specification No. 5/1998 concerning the methods for obtaining samples of oils and fats, has approved the use of International Standard Specification No. 5555/1991 related to this subject.

However, the instructions for sampling fats and oils are merely a facilitation, summary and translation of the most important provisions of the International Standard Specification No. 5555/1991 and if further details of the sample collection shall be required, then reference shall be made to that Specification as it is considered to be a Jordanian Standard Specification.

Annex C

Schedules of Sample Amounts

[Recommendations 3 and 10 refer to all of the following schedules – When portions of units can be collected, the schedule should so note, along with a maximum sample size (10 kg suggested). Suggested schedules are identified below by (XXX). See also recommendations 2, 4 and 6]

Schedule No. (1) *

The Amount of Sample required for Tinned, Packaged and Packed Foods that are not Affected by Storage (Shelf-Stable)

Amount of Consignment “Number of Units”	Number of Parcels that shall be Opened of which all of their Packages shall be Externally Tested “Random Selection”	The Amount of the Sample Collected for the Laboratory Test “Number of Units”
Less than 1200	The square root for a number of the consignment’s parcels	3
1200-7200		6
7201-10.000		13
1001-20.000		21
20001-30.000		29
More than 30.000		38

* **N.B.** This schedule should be used if a schedule related to the type of the tinned, packaged or packed food from which the sample should be collected is not available.

Schedule No. (2)

The Amount of Sample to be collected from Frozen Red and White Meats and Fish “Aimed for Direct Sale to the Consumer”

Amount of Consignment “Weight in kg.”	Number of Parcels that shall be Opened of which all of their Packages shall be Externally Tested “Random Selection”	The Amount of the Sample Collected for the Laboratory Test “Number of Units”
Less than 450	3	3
450-3000	6	6
3001-10.000	9	9
10001-27.000	15	15
27001-100.000	22	22
More than 300.000	27	27

Schedule No. (2/A) **(XXX)**

**The Amount of Sample Obtained from Frozen Red and White Meats and Fish
Imported for Manufacturing Purposes**

Amount of Consignment	Number of Parcels that shall be Opened of which all of their Packages shall be Externally Tested "Random Selection"	The Amount of the Sample Collected for the Laboratory Test "Number of Units"
Up to 500 kg.	2	2
5001-10.000	3	3
10001-20.000	4	4
20001-30.000	5	5
30001-40.000	6	6
40001-50.000	7	7
More than 50.000	8	8

Schedule No. (3)

**The Amount of Sample Obtained from Processed Products of
Red & White Meats and Fish* (Excluding Well Sealed Tins)**

Amount of Consignment "Number of Packages"	Number of Parcels that shall be Opened and Externally Tested "Random Selection"	The Amount of the Sample Collected for the Laboratory Test "Number of the Units"	
		Packages Weighing 1 kg. and less	Packages Weighing more than 1 kg. (XXX)
Up to 50	3	3	2
Less than 51-99	5	5	3
100-200	8	8	5
201-500	13	13	8
501-1500	20	20	13
1501-10.000	32	32	20
More than 10.000	50	50	32

* Such as the rolls of dried meat in addition to packed products of meats and fish.

Schedule No. (4) **(XXX)**

The Amount of Sample Obtained from Dried Milk

Volume of Consignment “Number of Packages”	Number of Parcels that shall be Opened of which all of their Packages shall be Externally Tested “Random Selection”			The Volume of the Sample Collected for the Laboratory Test “Number of Units”
	Parcel Weighing less than 1 kg.	Parcel Weighing less than 2 kg.	Parcel Weighing 2 kg. or more	
Less than 500	10	15	20	10
500-1000	15	20	30	15
More than 1000	20	30	40	20

N.B.: When collecting samples pursuant to the above Schedule No. (4), the instructions listed in Jordanian Standard Specification No. 402/1984 regarding the methods for obtaining samples of dried milk shall be observed.

Schedule No. (5)

The Amount of Cheese Samples

Packages Weighing 3 kg. and less/Parcel		Packages Weighing more than 3 kg./Parcel (XXX)	
Amount of Consignment (Number Packages)	Amount of Sample “Number of Units”	Amount of Consignment (Number Packages)	Amount of Sample “Number of Units”
1-100	4	1-8	2
101-500	6	9-25	3
501-1000	8	26-50	4
1001-5000	10	51-100	5
More than 5000	14	More than 100	8

N.B.: When collecting samples pursuant to the above Schedule No. (5), the instructions listed in Jordanian Standard Specification No. 422/1985 regarding the methods for obtaining the samples of cheese shall be observed.

Schedule No. (6) (XXX)**The Amount of Sample Obtained from Grains, Herbs and Dates Packed in Large Bags, Containers or Cartons**

Amount of Consignment “Number of Parcels”	Number of Parcels that shall be Opened and Externally Tested “Random Selection”	Amount of Bulk Sample Collected for the Laboratory Test “Number of Units”
Less than 100	5	5
100-150	8	8
151-1000	13	13
More than 1000	20	20

N.B.: The weight of the sample unit shall not be less than 400 gm.

Schedule No. (7) (XXX)**The Amount of Sample Obtained from Spices, Condiments and Gums Packed in Large Bags, Containers or Cartons**

Amount of Consignment “Number of Parcels”	Number of Parcels that shall be Opened and Externally Tested “Random Selection”	Amount of Bulk Sample Collected for the Laboratory Test “Number of Units”
Less than 100	5	5
100-150	8	8
151-1000	13	13
More than 1000	20	20

N.B.: The weight of the sample unit shall not be less than 200 gm.

Schedule No. (8)**The Amount of Sample Obtained from Dried Yogurt**

Amount of Consignment “Number of Parcels”	Number of Parcels that shall be Opened and Externally Tested “Random Selection”	Amount of Sample Collected for Laboratory Test of the Parcels Externally Tested “Number of Units”
Less than 100	10	20 Pieces
100-500	15	30 Pieces
More than 500	20	40 Pieces

Schedule No. (9)

The Amount of Sample Obtained from Essences of Soda Drinks, Fruit Juice and Beverages as well as Essences of Rose Water, Orange-Flower Water, Food Additives and Similar Substances “for Manufacturing Purposes Only”

Amount of Consignment “Number of Parcels”	Number of Parcels that shall be Externally Tested “Random Selection”	Amount of Sample Collected for Laboratory Test “Number of Units”
Less than 10	1	1
10-20	2	1
21-40	3	1
41 & More	4	1

Schedule No. (10)

The Amount of Sample Obtained from Vegetable Oils and Animal Ghee Packed in Containers or Plastic Packages

Amount of Consignment “Number of Parcels”	Number of Parcels that shall be Opened & Externally Tested “Random Selection”	Amount of Sample Collected for Laboratory Test “Number of Units”
Less than 450	3	3
450-3000	6	6
3001-10.000	9	9
More than 10.000	15	15

Schedule No. (11) (XXX)

The Amount of Sample Obtained from Liquid, Frozen, Dried and Pasteurized Products of Eggs

Amount of Consignment “Number of Parcels”	Number of Parcels that shall be Opened & Externally Tested “Random Selection”	Amount of Sample Collected for Laboratory Test “Number of Units”
Up to 50	5	5
51-100	10	10
More than 100	15	15

Schedule No. (12) (XXX)

The Amount of Sample Obtained from Wheat Flour, Macaroni, Spaghetti, Malt and the Derivatives of Wheat Flour Filled or Packed that are Consumed after being Cooked

Amount of Consignment “Number of Parcels”	Number of Parcels that shall be Opened & Externally Tested “Random Selection”	Amount of Sample Collected for Laboratory Test “Number of Units”
Less than 100	5	5
100-1000	10	10
More than 1000	20	20

Tea Samples Amount* (XXX)

For packages that contain more than 20 kg of tea in bulk, then the number of packages from which the sample shall be obtained shall not be less than as stated below in Schedule No. (13).

Schedule No. (13)

Number of Packages in the Lot	Number of the Packages from which Samples shall be Obtained
2-10	2
11-25	3
26-100	5
101 & More	7

For packages that contain 20 kg. or less of tea in bulk, then the minimum number of the packages from which the samples shall be obtained shall be pursuant to Schedule No. (13-A), below, provided that a sufficient weight required for laboratory analysis shall be assured.

Schedule No. (13-A)

Number of Packages in the Lot	Number of the Packages from which Samples shall be Obtained
Up to 25	3
26-100	5
101-300	7
301-500	10
501-1000	15
1001-3000	20
3001 & More	25

* **Source:** Jordanian Standard Specification No. 1243/1999 related to Tea/Methods of Samples Collection.

Schedule No. (14) (XXX)

**Sucrose and Liquid Glucose Sample Amount in Large Parcels
(Bags, Barrels ... etc.)**

Amount of Consignment (Number of Parcels)	Number of Parcels that shall be Opened Externally “Random Selection”	Amount of Bulk Sample (Number of Units) *
Up to 100	3	3
More than 100	6	6

* The sample unit shall not be less than 1 kg.

Schedule No. (15) (XXX)

**Sample Amount of Cocoa Powder, Chocolate, Candies, Halvah and Biscuits of
whatever Type**

Amount of Consignment (Number of Packages)	Number of Parcels that shall be Opened & Externally Tested “Random Selection”	Amount of Sample Collected for Laboratory Test (Number of Units) *
Less than 500	5	5
500-1000	8	8
1001-5000	13	13
5001-10.000	20	20
More than 10.000	32	32

* Regarding large parcels aimed for manufacturing use: a bulk sample which unit shall not be less than 200 gm.

Schedule No. (16)

Sample Amount of Tahini, Mayonnaise, Peanut Butter, and Butter

Amount of Consignment (Number of Parcels)	Number of Packages which Parcels in full shall be Opened & Externally Tested “Random Selection”	Amount of Sample Collected for Laboratory Test “Number of Units”
Less than 100	5	5
100-150	8	8
151-500	13	13
501-1200	20	20
1201-10.000	32	32
More than 10.000	50	50

Schedule No. (17) (XXX)

Sample Amount of Ice-Cream

Amount of Consignment “Number of Parcels”	Number of Parcels which shall be Opened & which Packages in full shall be Externally Tested “Random Selection”	Amount of Sample * Collected for Laboratory Test “Number of Units”
Less than 100	5	5
100-500	10	10
501-1000	15	15
More than 1000	20	20

* Packages weighing more than 3 kg. shall be excluded whereby one package shall be obtained notwithstanding the volume of the consignment.

Schedule No. (18)

Sample Amount of Frozen or Dried Fruit and Vegetables in Addition to Qamar Al-Ddin “Apricot Extract”

Amount of Consignment “Number of Parcels”	Number of Parcels which shall be Opened & which Packages in full shall be Externally Tested “Random Selection”	Amount of Sample * Collected for Laboratory Test “Number of Units”
Less than 100	5	5
100 or more	10	10

For consignments in bulk of dried fruit and vegetables, the weight of the bulk sample shall not be less than 2 kg.

Schedule No. (19)

Sample Amount of Special Dietary Foods and Food Supplements*

Amount of Consignment “Number of Packages”	Number of Parcels which shall be Opened & which Packages in full shall be Externally Tested “Random Selection”	Amount of Sample Collected for Laboratory Test “Number of Units”
Less than 100	2	2
100-500	3	3
More than 500	4	4

Schedule No. (20)

Sample Amount of Baby and Infant Foods Including Baby Milk

Amount of Consignment “Number of Packages”	Number of Parcels which shall be Opened & which Packages in full shall be Externally Tested “Random Selection”	Amount of Sample Collected for Laboratory Test “Number of Units”
Less than 500	10	10
500-1000	15	15
1001-5000	20	20
5001-10000	30	30
More than 100000	60	60

Schedule No. (21)

Bottled Water

Amount of Consignment “Number of Bottles”	Number of Parcels which shall be Opened & which Packages in full shall be Externally Tested “Random Selection”	Amount of Sample Collected for Laboratory Test “Number of Bottles”
Less than 500	5	5
500-1000	10	10
1001-5000	15	15
5001-10.000	20	20
More than 10.000	30	30

Proposed Guidelines and Documentation System to Track Food Inspection and Analysis Results for Risk-based Planning and Priority Setting

The Scope of Work titled "Investor Road Map-Food Safety Inspection (Year 2000)", under Activity 4.6.5 Food Inspection, item 1.2, states, "Develop guidelines for frequency of inspections of factories and inspection and sampling of imported foods based on risk analysis approach to food safety; develop a documentation system for tracking the results of factory inspections and food sample analysis for hazard exposure and risk analysis purposes and for planning and priority setting".

This SOW item was jointly assigned to AMIR consultants Anthony Whitehead and John Weatherwax. The tasks in this SOW item are interrelated as a tracking and documentation system for planning and priority setting in a risk-based system must involve and include all information and guidelines related to food imports.

This starts with the Customs manifest when a food is offered for entry into Jordan, and continues through the port sampling and laboratory analysis processes. In each phase, data from documents must be entered into a computer system for tracking and later retrieval for planning and decision making. This will require several procedural changes in the way the Ministry of Health (MOH) now handles documents and data. For example, a separate sample collection report will be needed, in addition to Customs entry documentation. (At present MOH samples are accompanied only by a Customs document and a letter). Also, laboratory analyses will need to be reported on separate analytical worksheets with the use of individual analyst notebooks limited to recording only limited information such as data in preparing standard solutions, etc. (At present most analysis data is only recorded in notebooks kept by each analyst and this makes data retrieval nearly impossible). In the final report the consultants will provide proposed formats for a sample collection report and an analytical worksheet, along with recommended procedural changes necessary for their use.

The two consultants have discussed the issues involved and what is needed to prepare a final report on this subject with recommendations. This consultant has provided Mr. Whitehead with his input and Mr. Whitehead has agreed to prepare the final consolidated report.